



UNITED STATES PATENT AND TRADEMARK OFFICE

[Handwritten signature]
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,673	03/17/2004	Bryan P. Prucher	9539-000054/CPA	2682
27572	7590	08/17/2006	[REDACTED]	EXAMINER
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			JIMENEZ, MARC QUEMUEL	
			[REDACTED]	ART UNIT
				PAPER NUMBER
				3726

DATE MAILED: 08/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/802,673	PRUCHER, BRYAN P.
	Examiner	Art Unit
	Marc Jimenez	3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-29 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) _____ is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) 1-29 are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 17 March 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>7-13-06, 4-12-04</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 4-12-04 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered. The parent application 09/930,611 file was unavailable during examination of the instant application. The foreign references lined through in the attached PTO-1449 that may be in the parent application have not yet been considered. The parent application has been ordered and will be checked if the foreign references are in the file.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed (ie. method claims).

3. The first line of the specification should include - - now abandoned - - after "August 15, 2001".

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 1-29** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The invention is directed to a method for fabricating an input pinion, however, all of the independent claims include the limitation “meshing the pinion with a ring gear” in the last line of each independent claim. This renders the scope of the invention unclear because a ring gear is not part of an input pinion. The preamble of each independent claim recites “A method for fabricating an input pinion”.

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. **Claims 8 and 22** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claims 2 and 19 recite “lapping the pinion”. However, there is no support in the original disclosure for lapping in combination with the steps of claims 8 and 22. The original disclosure only has support for conducting one of lapping, honing or grinding (paragraph [0040] of the instant application).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. As best understood, the claims are directed to a method of fabricating an input pinion and not to a method of assembling an input pinion to a ring gear. The rejections below are directed to the method of fabricating an input pinion as recited in the preamble of each independent claim.

10. **Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Parker (US5806373) in view of Kilop (US6250123).

Parker teaches providing a tubular shaft **14**, forming the tubular shaft **14** to define a plurality of spline teeth **18**, forging (col. 3, lines 45-46) a pinion **12** with a plurality of teeth to at least a near net size (abstract, line 9), performing one of a machining operation, grinding operation and honing operation to machine the teeth of the pinion to the desired tooth size (col. 3, lines 63-64) forming a round hole **21** in the pinion **12**, pressing an end of the shaft **14** into the pinion **12**, induction heating the pinion and shaft to heat-treat both a plurality of teeth that are formed on the pinion and at least one portion of the tubular shaft (col. 5, lines 14-16), and laser welding the tubular shaft to the pinion (abstract, line 11).

Parker teaches the invention cited above with the exception of roll forming the tubular shaft to create the spline teeth and wherein the size being larger than a desired tooth size by an amount less than or equal to about 0.04 inch.

Kilop teaches roll forming to create spline teeth (figure 3).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Parker with roll forming the spline teeth on the shaft, in light of the teachings of Kilop, in order to form symmetrically shaped teeth. The particular tooth size is considered an obvious matter of design choice to a person of ordinary skill in the art, at the time of the invention, depending upon the desired strength and tolerance needed of the pinion (Parker discusses in col. 4, lines 17-19, the need for close tolerances). In addition official notice is taken that it was well known to provide the claimed tooth size in order to provide a secure mesh.

11. **Claims 2, 3, 9-18 and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker in view of Sabroff et al. (US4856167).

Parker teaches the invention cited above with the exception of having a lapping operation.

Sabroff et al. teach that lapping operations are used in gears to provide the necessary surface quality (col. 6, lines 58-66).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Parker with a lapping operation, in light of the teachings of Sabroff et al., in order to provide the necessary surface quality.

Note that Parker teaches heat treating (col. 5, lines 14-26).

Sabroff et al. also teach mounting bearings to the shaft of pinion 12.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Parker with mounting a bearing to the shaft, in light of the teachings of Sabroff et al., in order to fasten the pinion shaft to a differential drive.

Regarding the claimed material used, it would have been an obvious matter of design choice to a person of ordinary skill in the art, to have used the claimed materials in order to provide the desired strength characteristics.

12. **Claim 4** rejected under 35 U.S.C. 103(a) as being unpatentable over Parker in view of Sabroff et al. as applied to claim 2 above, and further in view of Banas et al. (US4000392).

Parker/Sabroff teach the invention cited above with the exception of the particular laser weld depth. The particular depth of the laser weld is considered an obvious matter of design choice to a person of ordinary skill in the art, depending upon the desired weld strength. Banas et al. teach in figure 4 that weld depth is proportional to laser power. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Parker/Sabroff et al. with the claimed weld depth, in light of the teachings of Banas et al., in order to obtain the desired weld strength.

13. **Claims 5-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker in view of Sabroff et al. as applied to claim 2 above, and further in view of Lindsey et al. (US5070745) and Chmura (US4394421).

Parker/Sabroff teach the invention cited with the exception of roll forming threads on the shaft.

Lindsey et al. teach threads formed on a shaft (24).

Chmura teaches roll forming threads (11).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Parker/Sabroff et al. with roll forming threads on the shaft, in light of the teachings of Lindsey et al. and Chmura, in order to fasten the pinion shaft to a differential drive and in order to form symmetrically shaped threads by roll forming.

The particular tooth size is considered an obvious matter of design choice to a person of ordinary skill in the art, at the time of the invention, depending upon the desired strength and tolerance needed of the pinion (Parker discusses in col. 4, lines 17-19, the need for close tolerances). In addition official notice is taken that it was well known to provide the claimed tooth size in order to provide a secure mesh.

14. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Parker in view of Sabroff et al. as applied to claim 2 above, and further in view of McInerney et al. (US6041640).

Parker/Sabroff et al. teach the invention cited above with the exception of grinding or honing.

McInerney et al. teach that it is known to grind gears (col. 8, line 6).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the

invention, to have provided the invention of Parker/Sabroff et al. with grinding, in light of the teachings of McInerney et al., in order to form more precise and complete components (col. 8, lines 11-12 of McInerney et al.).

15. **Claims 19-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker in view of Kilop and Sabroff et al.

Parker teaches the invention cited above with the exception of roll forming the splines and lapping the pinion.

Kilop teaches roll forming to create spline teeth (figure 3).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Parker with roll forming the spline teeth on the shaft, in light of the teachings of Kilop, in order to form symmetrically shaped teeth.

Sabroff et al. teach that lapping operations are used in gears to provide the necessary surface quality (col. 6, lines 58-66).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Parker/Kilop with a lapping operation, in light of the teachings of Sabroff et al., in order to provide the necessary surface quality.

The particular tooth size is considered an obvious matter of design choice to a person of ordinary skill in the art, at the time of the invention, depending upon the desired strength and tolerance needed of the pinion (Parker discusses in col. 4, lines 17-19, the need for close tolerances). In addition official notice is taken that it was well known to provide the claimed

tooth size in order to provide a secure mesh. Sabroff et al. also teach mounting bearings to the shaft of pinion 12.

Sabroff et al. also teach mounting bearings to the shaft of pinion 12.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Parker/Kilop with mounting a bearing to the shaft, in light of the teachings of Sabroff et al., in order to fasten the pinion shaft to a differential drive.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Jimenez whose telephone number is (571) 272-4530. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



8-10-06

MARC JIMENEZ
PRIMARY EXAMINER